

REMARKS

In the Office Action mailed May 3, 2005, claims 1 and 5-10 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,304,357 to Sato et al. (Hereafter, "Sato.") Claims 1 and 6-9 were also rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent 6,113,689 to Moon.

Claims 2-4 were objected to as being dependent on a rejected base claim but allowable if re-written in independent form to include all of the limitations of the rejected base claim and any intervening claims.

As an initial matter, the Applicant states for this record, that the subject matter *claimed* in Sato and *claimed* in Moon is believed to be distinctly different than anything that the Applicant or the Applicant's assignee makes, uses, imports or sells in the United States.

As for the claim rejections, as can be seen above, independent claim 1 has been amended to recite that the method of forming a single crystal seed region is comprised of two separate steps. In the first step, the substrate is irradiated by a laser in a first scanning process. In the second step, the substrate is irradiated a second time, in a second direction that is opposite the first laser scanning direction. Note that the first and second irradiating steps are not performed simultaneously.

Sato does not teach or suggest forming a crystal seed region using two successive scans that are at right angles to each other. Sato teaches the use of two lasers, however, the two lasers are described as being used simultaneously.

In column 4, lines 45 – 53, the Sato specification states that two laser beams are used as heating sources. The first laser is described as being absorbed by silicon, the second laser is described as being absorbed by an insulating substrate.

In column 6, lines 9-14, the Sato specification states that the first laser beam is absorbed by the silicon layer 2 whereas the second laser beam is absorbed in the substrate 1.

In column 7, lines 11-17, the Sato specification states that the silicon and the insulating substrate are heated simultaneously to generate heat at positions of different depth in order to control the crystal orientation of recrystallized film.

In column 9, lines 35 – 43, the Sato specification states that the second laser beam encloses the first laser beam. In column 12, lines 13-18, the Sato specification states that the polycrystalline silicon thin film is *simultaneously* irradiated by an argon laser and a carbon dioxide laser to form a signal crystal.

The text of the Sato patent that is on-line at www.uspto.gov was searched using a web browser for occurrences of the words: orthogonal, right-angle, ninety degrees, 90 degrees, offset and direction, in order to determine whether Sato teaches or suggests the method now claimed in claim 1. It appears that Sato does not teach a two-step irradiation method as recited in claim 1. Therefore, claim 1 should be allowable over Sato.

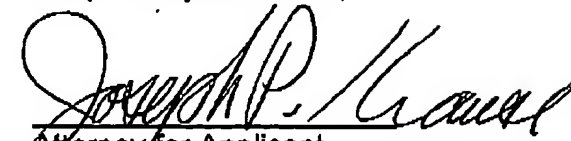
As for Moon, FIGS. 4A – 4G of Moon illustrate Moon's process for crystallizing amorphous silicon. The process of Moon is also described in columns 4-6. Paraphrased, the process disclosed by Moon is to irradiate a localized region of the amorphous silicon using a laser to a temperature of about 700 degrees C to 800 degrees C. (See column 6, lines 8-13.) The laser is then moved about 5 micrometers where a new area of the amorphous silicon is heated by the laser. (See column 6, lines 20-29.) During the time that the laser is heating and moving, a "Rapid Thermal Processing" or RTP device located under the substrate continuously heats the substrate. Thus, Moon does not show or suggest the two-step, orthogonal heating claimed in the amended claims.

Since claim 1 is believed to be in condition for allowance over both Moon and Sato et al., it is respectfully submitted that claims that depend on claim 1 are also allowable. For the foregoing reasons, the Applicant respectfully submits that claims 1 –10 are allowable. Reconsideration of them is respectfully requested.

New claim 11 recites that the 90 degree turning is accomplished by turning one of the mask and the substrate.

Respectfully submitted,

October 20, 2005
Date


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